

WHAT WE CLAIM IS:

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1. A method for preserving resources in an advanced intelligent network telecommunication system having a first telephone connected to a service switching point, a second telephone, a service control point, and a service node, comprising the
- 5 steps of:
- (a) detecting an incoming call to the first telephone by the service switching point;
- (b) checking the busy/idle status of the second telephone by the service control point; and
- 10 (c) generating an outgoing call to the second telephone by the service node if, but only if, the second telephone is idle.
2. The method of claim 1, wherein said detecting step is performed by a trigger provisioned at the service switching point.
3. The method of claim 2, wherein said trigger is a termination attempt trigger.
- 15 4. The method of claim 1, wherein said checking step is performed by the service control point by sending a Monitor_for_Change message to, and by receiving a Status_Reported message from, the service switching point.
5. The method of claim 1, wherein the service control point and the service node exchange messages via X.25 interface.
- 20 6. The method of claim 1, wherein said second telephone is a wireless telephone that is served by a home location register.

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7. The method of claim 6, wherein said checking step is performed by the service control point by sending an IS-41 LocationRequest message to, and by receiving an IS-41 LocationRequest Return Result message from, the home location register.

5 8. The method of claim 6, wherein the service control point and the service node exchange messages via X.25 interface.

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9. The method of claim 1, further comprising checking the busy/idle status of the first telephone.

10 10. The method of claim 9, wherein the outgoing call to the second telephone is only generated if both the first and the second telephones are idle.

11. A method for providing simultaneous ringing service in an advanced intelligent network telecommunication system having a primary wireline telephone connected to a first service switching point, a secondary telephone, and a database, comprising the steps of:

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15 (a) associating the telephone numbers of the primary and secondary telephones in the database;

(b) detecting an incoming call to the primary telephone;

(c) checking the busy/idle status of the primary and the secondary telephones;

20 (d) generating a first outgoing call to the primary telephone and a second outgoing call to the secondary telephone if, but only if, both the primary and the secondary telephones are idle; and

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(e) upon answering by the primary telephone or the secondary telephone,
connecting the incoming call to the telephone that has answered and canceling the
call to the other telephone that has not answered.

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5 12. The method of claim 11, wherein the database is maintained at a service
control point within the advanced intelligent network, and wherein said detecting
step is performed by a trigger provisioned at said first service switching point.

13. The method of claim 12, wherein said generating step is performed by a
service node in the advanced intelligent network.

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10 14. The method of claim 13, wherein the secondary telephone is a wireline
telephone that is connected to a second service switching point.

15. The method of claim 14, wherein said checking step is performed by the
service control point by sending Monitor_for_Change messages to, and by receiving
Status_Reported messages from, said first and said second service switching points.

15 16. The method of claim 13, wherein said secondary telephone is a wireless
telephone line that is served by a home location register.

17. The method of claim 16, wherein said checking step is performed by the
service control point sending a Monitor_for_Change message to, and receiving a
Status_Reported message from, said first service switching point, and sending an
IS-41 LocationRequest message to, and receiving an IS-41 LocationRequest Return
20 Result message from, said home location register.

18. The method of claim 17, wherein said first outgoing call is generated about
four seconds after said second outgoing call is generated.

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19. The method of claim 13, further comprising the steps of:

(f) connecting the incoming call to the telephone that has answered;

(g) keeping the incoming call connected through the service node for a predetermined duration;

5 (h) upon expiration of the predetermined duration, withdrawing the service node from the incoming call connection.

20. The method of claim 19, wherein said predetermined duration is a tunable variable.

21. An advanced intelligent network telecommunication system comprising:

10 (a) a first service switching point connected to a primary telephone of a subscriber, said primary telephone having a primary telephone number;

(b) a service control point having a database associating the primary telephone number with a secondary telephone number of a secondary telephone of the subscriber;

15 (c) means for detecting an incoming call to the primary telephone;

(d) means for checking the busy/idle status of the primary and secondary telephones; and

(e) a service node having the capability of generating multiple calls simultaneously,

20 wherein when the incoming call to the primary telephone is detected, the service control point checks the busy/idle status of the primary and secondary telephones, and the service control point forwards the call to the service node for

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generating a first outgoing call to the primary telephone and a second outgoing call to the secondary telephone if, but only if, both the primary and the secondary telephones are idle.

22. The telecommunication system of claim 21, wherein said detecting means is performed by a trigger provisioned at the first service switching point.

23. The telecommunication system of claim 22, wherein said trigger is a termination attempt trigger.

24. The telecommunication system of claim 21, wherein said secondary telephone is a wireline telephone connected to a second service switching point.

25. The telecommunication system of claim 24, wherein the busy/idle status checking means is performed by the service control point by sending Monitor_for_Change messages to, and by receiving Status_Reported messages from, the first and the second service switching points.

26. The telecommunication system of claim 21, wherein said secondary telephone is a wireless telephone served by a home location register.

27. The telecommunication system of claim 26, wherein the busy/idle status checking means is performed by the service control point by sending a Monitor_for_Change message to, and by receiving Status_Reported message from, the first service switching point, and by sending an IS-41 LocationRequest message to, and by receiving an IS-41 LocationRequest Return Result message from, the home location register.

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28. The telecommunication system of claim 21, wherein said second outgoing call is generated about four seconds before said first outgoing call is generated.

29. An advanced intelligent network telecommunication system, comprising a service node, a first telephone, and a second telephone, wherein when the service
5 node receives an incoming call from the first telephone, the service node generates an outgoing call to the second telephone, and when the second telephone answers, the service node keeps the first and the second telephones connected for a predetermined duration before withdrawing from the connection.

30. The telecommunication system of claim 29, wherein the predetermined
10 duration is a tunable variable.

31. A method for providing simultaneous ringing service to a wireline telephone of an advanced intelligent network telecommunication system and a wireless telephone of a wireless intelligent network, comprising the steps of:

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15 (a) associating the telephone numbers of the wireline telephone and the wireless telephone in a database accessible by a service control point;
- (b) detecting an incoming call to the wireline telephone;
- (c) checking the busy/idle status of the wireline telephone and the wireless telephone;
- (d) generating a first outgoing call to the wireless telephone and a second
20 outgoing call to the wireline telephone if, but only if, both the wireline telephone and the secondary telephone are available to receive calls; and

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(e) after one of the wireline telephone and the wireless telephone answers the incoming call, connecting the incoming call to the telephone that has answered and canceling the call to the telephone that has not answered.

32. The method of claim 31, wherein said detecting step is performed by a trigger provisioned at a service switching point connected to the wireline telephone.

33. The method of claim 32, wherein said trigger is a termination attempt trigger.

34. The method of claim 31, wherein said checking step is performed by the service control point by sending a Monitor_for_Change message to, and by receiving Status_Reported message from, the service switching point, and by sending an IS-41 LocationRequest message to, and by receiving an IS-41 LocationRequest Return Result message from, a home location register serving the secondary telephone.

35. The method of claim 31, wherein said generating step is performed by a service node in the advanced intelligent network.

36. The method of claim 35, wherein the second outgoing call is generated about four seconds after the first outgoing call is generated.

37. The method of claim 35, further comprising the steps of:

(f) connecting the incoming call to the telephone that has answered;

(g) keeping the incoming call connected through the service node for a predetermined duration;

(h) upon expiration of the predetermined duration, withdrawing the service node from the incoming call connection.

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39. A method for reducing clipping effect in an advanced intelligent network telecommunication system having a service node, a first telephone, and a second
5 telephone, comprising the steps of:

- sub a3 } (a) receiving from the first telephone an incoming call by the service node;
(b) placing an outgoing call to the second telephone by the service node;
(c) connecting the first telephone to the second telephone;
(d) keeping the first telephone and the second telephone connected

10 through the service node for a predetermined duration;

(e) upon expiration of the predetermined duration, withdrawing the service node from the connection.

40. The method of claim 39, wherein the predetermined duration is a tunable variable.